2.

| $X$ | $Y$ | $X^2$ | $Y^2$ | $XY$ |
|---|---|---|---|---|
| 1 | 10 | $1^2 = 1$ | $10^2 = 100$ | $1(10) = 10$ |
| 2 | 15 | $2^2 = 4$ | $15^2 = 225$ | $2(15) = 30$ |
| 8 | 35 | $8^2 = 64$ | $35^2 = 1225$ | $8(35) = 280$ |
| 13 | 44 | $13^2 = 169$ | $44^2 = 1936$ | $13(44) = 572$ |
| $\Sigma X = 24$ | $\Sigma Y = 104$ | $\Sigma X^2 = 238$ | $\Sigma Y^2 = 3486$ | $\Sigma XY = 892$ |

$$r = \frac{\Sigma XY - \frac{\Sigma X \Sigma Y}{n}}{\sqrt{\Sigma X^2 - \frac{(\Sigma X)^2}{n}}\sqrt{\Sigma Y^2 - \frac{(\Sigma Y)^2}{n}}}$$

$$= \frac{892 - \frac{24(104)}{4}}{\sqrt{238 - \frac{24^2}{4}}\sqrt{3486 - \frac{104^2}{4}}}$$

$$= \frac{268}{271.1235881}$$

$$= .9885$$

4.

| $X$ | $Y$ |
|---|---|
| 1 | 33 |
| 2 | 42 |
| 3 | 57 |
| 4 | 62 |
| 5 | 33 |

$n = 5$

$r = .2342$

$|r| = .2342$

$CV = 0.8780$

NO LINEAR RELATION